CDP-X222ES

SONY
SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model
Australian Model

SUPPLEMENT-1

File this supplement with the service manual.

1. **BLOCK DIAGRAM**
2. **PIN DESCRIPTION**
   - **IC327 Mechanism Controller**
   - **IC401 Master Controller**

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2. PIN DESCRIPTION

• IC327 MECHANISM CONTROLLER (M37450M8-372FP)

Functions effected by the captioned controller include IC101 (RF signal processing, servo), IC328 (DSP), IC330 (digital filter, custom file), loading control and volume motor control, data exchange with IC401 (master controller).

Pin No.	Pin Name	I /O	Description	Connect to the following parts.
1	NC	–	Not used (open)	
2	DIRCON	–	Not used (open)	
3	CNIN	I	Signal input for track jump count.	IC101 (SSP)
4	QINT	O	Interrupt output, the pulse output's when the data proceed to master controller	IC401
5	M/F	I/O	Command select I/O terminal. Custom file data : "L" Subcode data : "H"	IC401
6	SACK	O	Data transfer acknowledge signal output. The pulse output's when the data recevied.	IC401
7	MREQ	I	Command request input from master controller.	IC401
8 - 11	CMD3 - 0	I/O	Control command I/O.	IC401
12	CLK	O	Data transfer clock output.	IC328 (DSP), IC101 (SSP)
13	XLT	O	Serial data latch signal output.	IC328 (DSP), IC101 (SSP)
14	DATA	O	Serial data output	IC328 (DSP), IC101 (SSP)
15	ATT (DATA)	O	Serial data output for attenuate control	IC330 (D/F)
16	SHIFT (CLK)	O	Data transfer clock output	IC330 (D/F)
17	LATCH	O	Data latch signal output	IC330 (D/F)
18	LDON	O	Laser diode ON/OFF select output of optical pick-up. "H" : ON	IC101 (SSP)
19	SCOR	±	Subcode sync signal S0 + S1 detection input.	IC328 (DSP)
20	WR	O	Not used (open)	
21	RD	O		
22	R/W	O		
23	SYNC	O		
24	RESET OUT	O		
25	CN Vss	I	Operation mode control signal input of processor.	
26	$\overline{\text{RESET}}$	I	Reset input. "L" : reset	IC201 (POWER)
27	NC	–	Not used (open)	
28	XIN	I	Clock input (1MHz)	X355
29	XOUT	O	Clock output	X355
30, 31	NC	–	Not used (open)	
32	Vss	–	Power supply (GND)	
33	AMUTE	O	Analog muting control output. Not in use with this model (pull up)	
34	MUTE	O	Muting control output. "H" : Mute	IC328 (DSP)
35	$\overline{\text{WE}}$	O	Write enable output to custom file memory.	IC325 (RAM)
36 - 40	A12 - 8	O	Address bus output to custom file memory.	IC325 (RAM)
41	NC	–	Not used (open)	
42 - 49	A7 - 0	O	Address bus output to custom file memory.	IC325 (RAM)

Pin No.	Pin Name	I /O	Description	Connect to the following parts.
50 - 57	D7 - 0	I/O	Address bus I/O to custom file memory.	IC325 (RAM)
58	SENS	I	SENS input	IC101 (SSP), IC328 (DSP)
59	GFS	I	Frame sync signal clock status input. "H" : OK	IC328 (DSP)
60	FOK	I	Focus OK signal input	IC101 (SSP)
61	ADJ	I	Test mode input. Upon "L", GFS checking is disabled while continuously rotating the spindle no matter whether frame sync is issued during PLAY, PAUSE or SEARCH and it is not effected the focus gain down.	
62	AFADJ	I	Test mode input. Various test operations are effected upon "L" after turning ON the POWER.	
63	INSW	I	Loading in switch input. Disc table closed : "L".	S001
64	OUT SW	I	Loading out switch input. Disc table opened : "L".	S002
65	V LEVEL	I	Location detecter input (analog) of phone level volume.	RV405
66	VOL UP	O	Volume motor control output. Volume up : "H" *1	IC326 (RV405)
67	VOL DWN	O	Volume motor control output. Volume down : "L" *1	IC326 (RV405)
68	D/A Vref	I	D/A converter reference voltage input (+5V).	
69	A/D Vref	I	A/D converter reference voltage input (+5V).	
70	AVss	–	Analog power supply (GND)	
71	AVcc	–	Analog power supply (+5V)	
72	Vcc	–	Power supply (+5V)	
73	Vss	–	Power supply (GND)	
74	DFCT SW	O	ON/OFF selector output for DEFECT circuit. The disc flaw detection circuit is turned off ("H") when facus-search.	IC101 (SSP)
75	SQ CLK		Subcode Q data readout clock output.	IC328 (DSP)
76	VOL LED	O	Volume LED ON/OFF control output. "H" : LED ON	Q323 (RV405)
77	SUBQ	I	Subcode Q data input.	IC328 (DSP)
78	LOD IN	O	Output to rotate the loading motor in the loading out direction. *2	IC391 (M001)
79	LOD OUT	O	Output to rotate the loading motor in the loading in direction. *2	IC391 (M001)
80	NC	–	Not used (open)	

*1 Volume motor control

	UP	DOWN	BRAKE
VOL UP ⑯	H	L	H
VOL DOWN ⑰	L	H	H

*2 Loading motor control

	IN	OUT	BRAKE
LOD IN ⑱	H	L	H
LOD OUT ⑲	L	H	H

• IC401 MASTER CONTROLLER (MSC62408-015GS-V1K)

In charge of displaying the FL tube, keying in and remote control signal input, data exchanges with the IC327 (mechanism controller) in 4-bit parallel mode.

Pin No.	Pin Name	I /O	Description	Connect to the following parts.
2	TIMER	I	Timer switch input. "H" : PLAY, "L" : OFF	S476
3 - 9	KEY0 - 6	I	Key matrix input.	KEY MATRIX
10 - 13	CMD0 - 3	I/O	Control command I/O terminals	IC327
14	M. REQ	O	Command request input to mechanism controller	IC327
15	S. ACK	I	Data transfer acknowledge signal input	IC327
16	M/F	I/O	Command select I/O terminal	IC327
17	RMIN	I	Remote control signal input	IC412
18	–	–	Not used (GND)	
19	Q. INT	O	Interrupt output. The pulse proceed when mechanism controller (IC327) received the data.	IC327
20	$\overline{\text{RESET}}$	I	Reset input. "L" : reset	IC201 (POWER)
21	TEST	I	Not used (GND)	
22	BUS OUT	O	Not used (open)	
23	TEST	I	Not used (pull up)	
24	INDEX	O	Panel LED ON/OFF control output. "H" : LED ON	Q403 - 408 (D408 - 412)
25	PGM	O		
26	SHUF	O		
27	CONT	O		
28	PAUSE	O		
29	PLAY	O		
30	$\overline{\text{OSCI}}$	I	Clock input (4.19MHz)	X411
31	$\overline{\text{OSCO}}$	O	Clock output	X411
32	GND	–	Ground	
33 - 44	T0 - 11	O	Output port for grid of FL tube.	FLD401
45	N. C	–	Not used (open)	
46 - 48	S1 - 3	O	Output port for segment of FL tube.	FLD401
49	VFLT	–	Power supply port for built-in Fl tube controller. (+37V)	
50 - 73	S4 - 27	O	Output port for segment of FL tube.	FLD401
74	V_{DD}	–	Power supply port (+5V)	
75 - 80	SCAN0 - 5	O	Key scan output	KEY MATRIX